

CLAIMS

1. A millimetre wave imaging apparatus comprising scanning means, focusing means and a plurality of receiver elements, the focusing means being physically interposed between the scanning means and the receiver elements, the scanning means being arranged to scan radiation from a field of view onto said focusing means such that focussed radiation from a region of the field of view is incident upon at least one of the plurality of receiver elements.
2. Apparatus according to Claim 1 wherein the scanning means is a prism.
- 15 3. Apparatus according to Claim 2 wherein the prism is a wedge prism.
4. Apparatus according to Claim 2 wherein the prism is of uniform thickness and varying refractive index across a cross-section thereof.
- 20 5. Apparatus according to any one of Claims 2 to 4 wherein the prism is arranged to rotate.
6. Apparatus according to Claim 5 wherein the prism is arranged to produce a circular scan path in the focal plane.
- 25 7. Apparatus according to any preceding claim wherein the scanning means comprise two prisms.
8. An apparatus according to Claim 7 wherein each of the prisms is arranged to rotate.

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9. An apparatus according to Claim 8 wherein the prisms are arranged to rotate in opposite directions to each other.

10. An apparatus according to any one of Claims 7 to 9 wherein the prisms are arranged to produce an elliptical scan path in the focal plane.

11. An apparatus according to Claim 10 wherein the elliptical scan path has a minor diameter that approximately corresponds to a spacing between adjacent receiver element of an array.

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12. An apparatus according to Claim 10 or Claim 11 wherein the plurality of receivers are formed into a two dimensional array, and the elliptical scan path has a major diameter that approximately corresponds to a distance between adjacent receiver elements of an array.

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13. An apparatus according to any one of Claims 7 to 12 wherein the prisms are arranged to rotate at a rate of at least 25 revolutions per second.

14. An apparatus according to any preceding claim wherein the plurality of receiver elements are arranged in a linear array, a curvilinear array or a sparse two dimensional array.

15. An apparatus according to any preceding claim wherein the focusing means is a reflector lens.

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16. An apparatus according to Claim 15 wherein the reflector lens comprises a first polarising element.

17. An apparatus according to either of Claims 15 or 16 wherein the reflector lens comprises a second polarising element arranged to reflect radiation transmitted by the first polarising element.

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18. An apparatus according to any one of Claims 15 to 17 wherein the reflector lens comprises a polarisation altering element.

19. Apparatus according to any preceding claim wherein the scanning means, which is arranged to define an entrance pupil of the apparatus, is placed at the effective centre of curvature of the focusing means.